

AMENDMENTS TO THE CLAIMS

The claims in this listing will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A heat generating apparatus for an electromagnetic induction heating fixing apparatus of an image forming apparatus, comprising:

a heat generating member;

an exciting coil provided opposite to the heat generating member and serving to cause the heat generating member to generate heat by electromagnetic induction;

a thermostat provided in the vicinity of the heat generating member and serving to stop supply of power to the exciting coil when a temperature abnormality of the heat generating member is detected;

a power circuit comprising a rectifying circuit, a resonance circuit and a smoothing circuit and serving to control the supply of the power to the exciting coil, wherein the resonance circuit is connected in parallel with the exciting coil, one end of the smoothing circuit being connected to the resonance circuit and the exciting coil, and another end of the smoothing circuit being directly connected to the rectifying circuit; and

a lead wire connecting the exciting coil, the thermostat and the power circuit,

wherein the thermostat is electrically connected between the rectifying circuit and the smoothing circuit.

2. (Previously Presented) The heat generating apparatus according to claim 1, wherein the exciting coil is connected to the power circuit with the lead wire and a second lead wire, and the thermostat is connected to the power circuit with the lead wire and a third lead wire.

3. (Previously Presented) The heat generating apparatus according to claim 1, wherein the lead wire connects to a connector comprising at least four pins, two of the pins connect the exciting coil to the power circuit, and two of the pins are configured to connect the thermostat to the power circuit, wherein one of the two pins configured to connect the thermostat to the power circuit is designated for a first supply voltage, and the other pin is designated for a second supply voltage, thereby preventing an erroneous connection of the exciting coil to the power circuit.

4. (Previously Presented) The heat generating apparatus according to claim 1, wherein the lead wire connects to a connector comprising two pins that connect the exciting coil to the power circuit, and two pins configured to connect the thermostat to the power circuit, wherein one of the two pins configured to connect the thermostat to the power circuit is designated for a first supply

voltage, and the other pin is designated for a second supply voltage, thereby preventing an erroneous connection of the exciting coil to the power circuit.

5. (Previously Presented) A heat generating apparatus, comprising:

- a heat generating member;
- an exciting coil provided opposite to the heat generating member and serving to cause the heat generating member to generate heat by electromagnetic induction;
- a first power source for supplying power to the exciting coil;
- a power circuit comprising a rectifying circuit, a resonance circuit and a smoothing circuit, wherein the resonance circuit is connected in parallel with the exciting coil, one end of the smoothing circuit is connected to the resonance circuit and the exciting coil, and another end of the smoothing circuit is directly connected to the rectifying circuit;
- a switching unit for switching ON/OFF of the supply of the power from the first power source to the exciting coil;
- a second power source for driving the switching unit; and
- a thermostat for stopping the supply of the power from the first power source to the exciting coil when the heat generating member exceeds a predetermined temperature.

6. (Original) The heat generating apparatus as claimed in claim 5, further comprising:

a switching unit voltage detecting circuit which detects that a voltage to be applied to the switching unit exceeds a safe operating voltage range; and

a control circuit which controls a power to be supplied to the coil in response to a detection signal of the switching unit voltage detecting circuit.

7. (Previously Presented) The heat generating apparatus according to claim 6, wherein when the switching unit voltage detecting circuit detects that the safe operating voltage range of the switching unit is exceeded, the control circuit limits the supply of the power to the exciting coil to carry out a control in such a manner that the voltage to be applied to the switching unit is maintained within the safe operating voltage range.

8. (Previously Presented) The heat generating apparatus according to claim 6, wherein when the switching unit voltage detecting circuit detects that the safe operating voltage range of the switching unit is exceeded, the control circuit detects the supply of the power to the exciting coil and attenuates the voltage to be applied to the switching unit to a level within a safe operating voltage range.

9. (Original) The heat generating apparatus according to claim 6, wherein when the switching unit voltage detecting circuit detects that the safe operating voltage range of the switching unit is exceeded, the control circuit stops the supply of the power to the exciting coil.

10. (Previously Presented) An electromagnetic induction heating fixing apparatus for an image forming apparatus, comprising:

a heat generating member;

an exciting coil provided opposite to the heat generating member and serving to cause the heat generating member to generate heat by electromagnetic induction;

a thermostat provided in the vicinity of the heat generating member and serving to stop supply of power to the exciting coil when a temperature abnormality of the heat generating member is detected;

a power circuit comprising a rectifying circuit, a resonance circuit and a smoothing circuit and serving to control the supply of the power to the exciting coil, wherein the resonance circuit is connected in parallel with the exciting coil, one end of the smoothing circuit being connected to the resonance circuit and the exciting coil, and another end of the smoothing circuit being directly connected to the rectifying circuit; and

a lead wire connecting the exciting coil, the thermostat and the power circuit,

wherein the thermostat is electrically connected between the rectifying circuit and the smoothing circuit.

11. (Previously Presented) An image forming apparatus, comprising:

a photosensitive member;

a charger which uniformly charges a surface of the photosensitive member to have a predetermined electric potential;

an exposing unit which irradiates a scanning line of a light beam corresponding to image data on the charged photosensitive member, thereby forming electrostatic latent images;

a developer which develops the electrostatic latent images formed on the photosensitive member;

a cleaner which removes a toner remaining on the photosensitive member; and

an electromagnetic induction heating fixing apparatus, comprising:

a heat generating member;

an exciting coil provided opposite to the heat generating member and serving to cause the heat generating member to generate heat by electromagnetic induction;

a thermostat provided in the vicinity of the heat generating member and serving to stop supply of power to the exciting coil when a temperature abnormality of the heat generating member is detected;

a power circuit comprising a rectifying circuit, a resonance circuit and a smoothing circuit and serving to control the supply of the power to the exciting coil, wherein the resonance circuit is connected in parallel with the exciting coil, one end of the smoothing circuit being connected to the resonance circuit and the exciting coil, and another end of the smoothing circuit being directly connected to the rectifying circuit; and

a lead wire connecting the exciting coil, the thermostat and the power circuit,

wherein the thermostat is electrically connected between the rectifying circuit and the smoothing circuit.